

CLAIMS

What is claimed is:

1. A method of producing chain links suitable for use in making jewelry rope chains comprising the steps of:
 - a) providing at least one chain link having an inner periphery of a predetermined shape, an outer periphery of a predetermined shape and a thickness,
 - b) providing a mandril having an outer periphery configured for slidable movement of said at least one chain link along said outer periphery of said mandril,
 - c) sliding said at least one chain link onto said mandril,
 - d) contouring the outer periphery of said at least one chain link while said at least one chain link is arranged on said mandril, and
 - e) removing said at least one chain link from said mandril,
 - f) wherein said inner and outer peripheries of said at least one chain link are continuous and said contouring the outer periphery of said at least one chain link comprises the step of creating a gap between said inner and outer peripheries of said at least one chain link for intertwining one link with another, said gap defining a gap location along the outer and inner peripheries of said at least one chain link.
2. A method of producing chain links in accordance with claim 1, further comprising the step of arranging a plurality of chain links onto said mandril prior to contouring.
3. A method of producing chain links in accordance with claim 1, wherein said contouring further comprises the step of contouring the outer periphery of said at least one chain link along said outer periphery not comprised by said gap location.
4. A method of producing chain links in accordance with claim 1, wherein said mandril is flexible.
5. A method of producing chain links in accordance with claim 1 wherein said at least one chain link is not rotatable around said mandril.

6. A method of producing chain links in accordance with claim 1 wherein said slidable movement of said at least one chain link is restricted to the axial direction.
7. A method of producing chain links suitable for use in making jewelry rope chains comprising the steps of:
- a) providing a plurality of individual chain links, each link having a continuous inner periphery of a predetermined shape, a continuous outer periphery of a predetermined shape and a thickness,
 - b) providing a mandril having an outer periphery configured for slidable movement of said links along said outer periphery of said mandril,
 - c) sliding said links onto said mandril,
 - d) creating a gap along a portion of each link between the inner and outer periphery of each link, said gap for intertwining one link within another,
 - e) contouring the outer periphery of said links while said links are arranged on said mandril, and
 - f) removing said links from said mandril.
8. A method of producing chain links in accordance with claim 7, wherein said mandril is flexible.
9. A method of producing chain links in accordance with claim 7, wherein said at least one chain link is not rotatable around said mandril.
10. A method of producing chain links in accordance with claim 7, wherein said slidable movement of said at least one chain link is restricted to the axial direction.
11. A method of creating rope chains from intertwinable chain links comprising the steps of:
- a) providing a plurality of chain links, each link having an inner periphery of a predetermined shape, an outer periphery of a predetermined shape and a thickness,
 - b) providing a mandril having an outer periphery configured for slidable movement of said links along said outer periphery of said mandril,
 - c) sliding said links onto said mandril,

- d) contouring the outer periphery of said links while said links are arranged on said mandril,
 - e) removing said links from said mandril, and
 - f) intertwining said links to form a rope chain,
 - g) wherein said inner and outer peripheries of said at least links are continuous and said contouring the outer periphery of said links comprises the step of creating a gap between said inner and outer peripheries of said links for intertwining one link with another, said gap defining a gap location along the outer and inner peripheries of said links.
12. A method of creating rope chains in accordance with claim 11, wherein said at least one chain link is not rotatable around said mandril.
13. A method of creating rope chains in accordance with claim 11, wherein said slidable movement of said at least one chain link is restricted to the axial direction.
14. A method of producing chain links suitable for use in making jewelry rope chains comprising the steps of:
- a) wrapping a wire around a support, said wire having an inner periphery adjacent said support and an outer periphery,
 - b) contouring the outer periphery of said wire while said wire is wrapped around said support,
 - c) separating said wire into individual links suitable for intertwining and assembly into a jewelry rope chain, and
 - d) contouring a gap into said wire prior to separating said wire into individual links, said gap being provided for intertwining chain links and assembly of such chain links into a jewelry rope chain.
15. A method of producing jewelry chain links suitable for use in making jewelry rope chains comprising the steps of:
- a) providing at least one jewelry chain link having an inner periphery of a predetermined shape, an outer periphery of a predetermined shape and a thickness, said outer periphery being further defined by at least first and

second outer peripheral edges with a connecting edge disposed therebetween,

- b) providing a mandril having an outer periphery configured for slidable movement of said inner periphery of said at least one jewelry chain link along said outer periphery of said mandril,
- c) sliding said at least one jewelry chain link onto said mandril,
- d) contouring the outer periphery of said at least one jewelry chain link while said at least one jewelry chain link is arranged on said mandril such that said first outer peripheral edge is contoured differently than said second outer peripheral edge, and
- e) removing said at least one jewelry chain link from said mandril,
- f) wherein said inner and outer peripheries of said at least one jewelry chain link are continuous and said contouring of the outer periphery of said at least one jewelry chain link comprises the step of creating a gap opposite said connecting edge and extending between said inner and outer peripheries of said at least one jewelry chain link for intertwining one link with another, said gap defining a gap location along the outer and inner peripheries of said at least one jewelry chain link.

16. A method of producing jewelry chain links in accordance with claim 15, further comprising the step of arranging a plurality of jewelry chain links onto said mandril prior to contouring.

17. A method of producing jewelry chain links in accordance with claim 15, wherein said gap is formed opposite said connecting edge.

18. A method of producing jewelry chain links in accordance with claim 17, wherein said outer periphery of said mandril extends into said gap when said at least one jewelry chain link is slid on said mandril.

19. A method of producing jewelry chain links in accordance with claim 15, wherein said mandril is flexible.

20. A method of producing jewelry chain links in accordance with claim 16, wherein said contouring occurs by passing said at least one jewelry chain link through a contouring machine that contours a plurality of distinct portions of said outer periphery.
21. A method of producing jewelry chain links in accordance with claim 20, wherein multiple passes through contouring machines are required for the contouring of the outer periphery of said at least one jewelry chain link.
22. A method of producing jewelry chain links in accordance with claim 20, wherein said contouring occurs by passing said at least one jewelry chain link through a contouring machine that contours the first and second peripheral edges of said outer periphery differently with a single pass.
23. A method of producing jewelry chain links in accordance with claim 15, wherein said at least one jewelry chain link is not rotatable around said mandril.
24. A method of producing jewelry chain links in accordance with claim 15, wherein said slidable movement of said at least one jewelry chain link is restricted to the axial direction.
25. A method of producing jewelry chain links in accordance with claim 15, wherein said inner periphery is polygonal.
26. A method of producing jewelry chain links suitable for use in making jewelry rope chains comprising the steps of:
- a) providing a plurality of individual jewelry chain links, each link having a continuous inner periphery of a predetermined shape, a continuous outer periphery of a predetermined shape and a thickness, said continuous outer periphery having at least first and second outer peripheral edges and a connecting edge between said first and second outer peripheral edges,
 - b) providing a mandril having an outer periphery configured for slidable movement of said inner periphery of said links along said outer periphery of said mandril,
 - c) sliding said links onto said mandril,

- d) creating a gap along a portion of each link opposite said connecting edge and extending between the inner and outer periphery of each link, said gap for intertwining one link within another,
 - e) contouring the outer periphery of said links while said links are arranged on said mandril such that said first outer peripheral edge has a contour that is different from said second outer peripheral edge, and
 - f) removing said links from said mandril.
27. A method of producing jewelry chain links in accordance with claim 26, wherein said mandril is flexible.
28. A method of producing jewelry chain links in accordance with claim 26, wherein said at least one jewelry chain link is not rotatable around said mandril.
29. A method of producing jewelry chain links in accordance with claim 26, wherein said slidable movement of said at least one jewelry chain link is restricted to the axial direction.
30. A method of creating jewelry rope chains from intertwinable jewelry chain links comprising the steps of:
- a) providing a plurality of jewelry chain links, each link having an inner periphery of a predetermined shape, an outer periphery of a predetermined shape and a thickness, said outer periphery further including at least first and second outer peripheral edges connected by a connecting edge,
 - b) providing a mandril having an outer periphery configured for slidable movement of said links along said outer periphery of said mandril,
 - c) sliding said links onto said mandril,
 - d) contouring the outer periphery of said links while said links are arranged on said mandril such that said first outer peripheral edge has a contour that is different from said second outer peripheral edge,
 - e) removing said links from said mandril, and
 - f) intertwining said links to form a rope chain,

- g) wherein said inner and outer peripheries of said links are continuous and said contouring the outer periphery of said links comprises the step of creating a gap extending between said inner and outer peripheries of said links opposite said connecting edge for intertwining one link with another.
31. A method of creating jewelry rope chains in accordance with claim 30, wherein said at least one jewelry chain link is not rotatable around said mandril.
32. A method of creating jewelry rope chains in accordance with claim 30, wherein said slidable movement of said at least one jewelry chain link is restricted to the axial direction.
33. A method of creating jewelry rope chains in accordance with claim 30, wherein the thickness is non-uniform.